

Amendment to the Claims:

Please amend the claims as follows.

Please cancel claims 17, 21 and 33 without prejudice or disclaimer.

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity having an amino acid sequence having at least 90% ~~[[70%]]~~ sequence identity to the amino acid ~~[[a]]~~ sequence ~~as set forth in~~ SEQ ID NO:46, or encoded by a nucleic acid having at least 90% ~~[[70%]]~~ sequence identity to the polynucleotide ~~[[a]]~~ sequence ~~as set forth in~~ SEQ ID NO:45.

Claim 2 (currently amended): An isolated, synthetic or recombinant polynucleotide sequence encoding an endoglucanase or cellulase of claim 1.

Claim 3 (canceled)

Claim 4 (currently amended): The isolated, synthetic or recombinant polynucleotide of claim 2, wherein the polynucleotide is isolated from a prokaryote.

Claim 5 (previously presented): A vector comprising a nucleic acid having a sequence as set forth in claim 2 or claim 32 or claim 37.

Claim 6 (previously presented) The vector of claim 5, wherein the vector comprises a plasmid.

Claim 7 (previously presented) The vector of claim 5, wherein the vector comprises virus-derived sequences.

Claim 8 (currently amended): An isolated ~~[[A]]~~ host cell comprising the vector of claim 5, or a nucleic acid having a sequence as set forth in claim 32.

Claim 9 (previously presented) The host cell of claim 8, wherein the cell is prokaryotic.

Claims 10 to 13 (canceled)

Claim 14 (previously presented) A method for producing an enzyme comprising growing a host cell of claim 8 or claim 53 under conditions which allow the expression of the nucleic acid and isolating the enzyme encoded by the nucleic acid.

Claim 15 (previously presented) A method for degrading carboxymethylcellulose comprising contacting a carboxymethylcellulose with an effective amount of a polypeptide of claim 1.

Claim 16 (previously presented) A method for hydrolyzing a beta 1,4 glycosidic bond in a cellulose comprising contacting an effective amount of a polypeptide of claim 1 with the cellulose to hydrolyze the glycosidic bond.

Claim 17 (canceled)

Claim 18 (previously presented): The isolated, synthetic or recombinant polypeptide of claim 1 ~~[[17]]~~, wherein the sequence identity is at least 95%.

Claim 19 (currently amended) The isolated, synthetic or recombinant polypeptide of claim 37, wherein the nucleic acid that hybridizes under stringent conditions to the polynucleotide ~~[[a]]~~ sequence ~~as set forth in~~ SEQ ID NO:45 has at least ~~at least~~ 97% sequence identity to the polynucleotide SEQ ID NO:45.

Claim 20 (currently amended) The isolated, synthetic or recombinant polypeptide of claim 19, wherein the nucleic acid has the polynucleotide [[a]] sequence ~~as set forth in~~ SEQ ID NO:45.

Claim 21 (canceled)

Claim 22 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 1 [[21]], wherein the polypeptide has at least 95% sequence identity to the amino acid [[a]] sequence ~~as set forth in~~ SEQ ID NO:46.

Claim 23 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 22, wherein the polypeptide has the amino acid [[a]] sequence ~~as set forth in~~ SEQ ID NO:46.

Claim 24 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the polypeptide has endoglucanase activity.

Claim 25 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the polypeptide has cellulase activity.

Claim 26 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 25, wherein the cellulase activity comprises a carboxymethyl cellulase activity.

Claim 27 (currently amended): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity comprising at least 30 amino acid residues of a polypeptide having at least [[70%,]] 90% [[or 95%]] sequence identity to the [[an]] amino acid sequence ~~as set forth in~~ SEQ ID NO:46.

Claim 28 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 27, wherein the polypeptide comprises at least 50 amino acid residues of a polypeptide having at

least ~~[[70%,]]~~ 90% ~~[[or 95%]]~~ sequence identity to the ~~[[an]]~~ amino acid sequence ~~as set forth in~~ SEQ ID NO:46.

Claim 29 (currently amended): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity comprising at least 30 amino acid residues of a polypeptide having the ~~[[an]]~~ amino acid sequence ~~as set forth in~~ SEQ ID NO:46.

Claim 30 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 29, wherein the polypeptide comprises at least 50 amino acid residues.

Claim 31 (currently amended): An isolated, synthetic or recombinant polypeptide having endoglucanase or cellulase activity comprising the ~~[[an]]~~ amino acid sequence ~~as set forth in~~ SEQ ID NO:46 and having at least one conservative amino acid substitution, wherein the conservative amino acid substitution comprises: a replacement, one for another, among the aliphatic amino acids Ala, Val, Leu and Ile; or an interchange of the hydroxyl residues Ser and Thr; or an exchange of the acidic residues Asp and Glu; or a substitution between the amide residues Asn and Gln; or an exchange of the basic residues Lys and Arg; or a replacement among the aromatic residues Phe, Tyr.

Claim 32 (currently amended): An isolated, synthetic or recombinant nucleic acid encoding a polypeptide having endoglucanase or cellulase activity and having a nucleic acid sequence having at least ~~[[70%]]~~ 90% sequence identity to the polynucleotide ~~[[a]]~~ sequence ~~as set forth in~~ SEQ ID NO:45.

Claim 33 (canceled)

Claim 34 (currently amended): The isolated, synthetic or recombinant nucleic acid of claim 32 ~~[[33]]~~, wherein the nucleic acid sequence has at least 95% sequence identity to the polynucleotide ~~[[a]]~~ sequence ~~as set forth in~~ SEQ ID NO:45.

Claim 35 (currently amended) The isolated, synthetic or recombinant nucleic acid of claim 34, wherein the nucleic acid sequence hybridizes under stringent conditions to the polynucleotide [[a]] sequence as set forth in SEQ ID NO:45 and has at least 97% sequence identity to the polynucleotide [[a]] sequence as set forth in SEQ ID NO:45.

Claim 36 (currently amended) The isolated, synthetic or recombinant nucleic acid of claim 35, wherein the nucleic acid sequence has the polynucleotide [[a]] sequence as set forth in SEQ ID NO:45, or encodes the amino acid [[an]] amino acid sequence as set forth in SEQ ID NO:46.

Claim 37 (currently amended) An isolated, synthetic or recombinant nucleic acid encoding a polypeptide having endoglucanase or cellulase activity, wherein the nucleic acid hybridizes under stringent conditions to the polynucleotide [[a]] sequence as set forth in SEQ ID NO:45, and the stringent conditions comprise a wash step comprising a wash for 30 minutes at room temperature in a solution comprising 150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA, 0.5% SDS, followed by 30 minute wash in fresh solution at T_m-10°C.

Claim 38 (previously presented) The host cell of claim 8, wherein the cell is a plant cell.

Claim 39 (previously presented) The host cell of claim 8, wherein the cell is a yeast cell, a bacterial cell, a fungal cell, an insect cell or an animal cell.

Claim 40 (currently amended) A probe for identifying or isolating ~~isolated~~ a nucleic acid encoding a polypeptide having endoglucanase or cellulase activity, the probe comprising at least 15 contiguous nucleotides of a sequence encoding a polypeptide having endoglucanase or cellulase activity and having at least 90% sequence identity to SEQ ID NO:45, wherein the probe hybridizes under stringent conditions to the polynucleotide [[a]] sequence as set forth in SEQ ID NO:45, and the stringent conditions comprise a wash step comprising a wash for 30 minutes at room

temperature in a solution comprising 150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA, 0.5% SDS, followed by 30 minute wash in fresh solution at T_m-10°C.

Claim 41 (previously presented) The probe of claim 40, wherein the probe comprises at least 25 contiguous nucleotides.

Claim 42 (previously presented) The probe of claim 41, wherein the probe comprises at least 35 contiguous nucleotides.

Claim 43 (previously presented) The probe of claim 42, wherein the probe comprises at least 50 contiguous nucleotides.

Claim 44 (previously presented) A method for converting plant biomass into fuels and chemicals comprising contacting a plant biomass comprising carboxymethylcellulose with an effective amount of a polypeptide of claim 1, thereby enzymatically converting the plant biomass into a fuel or a chemical.

Claim 45 (previously presented) The method of claim 15 or 16, wherein the polypeptide is employed in the detergent and textile industry.

Claim 46 (previously presented) The method of claim 15 or 16, wherein the method produces an animal feed.

Claim 47 (previously presented) The method of claim 15 or 16, wherein the polypeptide is employed in waste treatment for degrading carboxymethylcellulose or for hydrolyzing a beta 1,4 glycosidic bond in a cellulose.

Claim 48 (previously presented) The method of claim 15 or 16, wherein the polypeptide is employed in a fruit juice industry or a brewing industry for the clarification or extraction of juices or brews.

Claim 49 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the composition of the polypeptide further comprises a textile.

Claim 50 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the composition of the polypeptide further comprises a feed.

Claim 51 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the composition of the polypeptide further comprises a detergent.

Claim 52 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the composition of the polypeptide further comprises a juice or a brew.

Claim 53 (currently amended): An isolated [[A]] host cell comprising a heterologous nucleic acid having a sequence as set forth in claim 37.

Claim 54 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 37, wherein the nucleic acid that hybridizes under stringent conditions to the polynucleotide [[a]] sequence ~~as set forth in~~ SEQ ID NO:45 has at least ~~at least~~ 95% sequence identity to the polynucleotide SEQ ID NO:45.

Claim 55 (currently amended): The isolated, synthetic or recombinant polypeptide of claim 1, wherein the cellulose activity comprises a carboxymethylcellulose activity.

Claim 56 (new): The isolated, synthetic or recombinant polypeptide of claim 27, wherein the polypeptide comprises at least 30 amino acid residues of a polypeptide having at least 95% sequence identity to the amino acid sequence SEQ ID NO:46.

Claim 57 (new): The isolated, synthetic or recombinant polypeptide of claim 28, wherein the polypeptide comprises at least 50 amino acid residues of a polypeptide having at least 95% sequence identity to the amino acid sequence SEQ ID NO:46.

Claim 58 (new): The isolated, synthetic or recombinant polypeptide of claim 56, wherein the polypeptide consists essentially of at least 30 amino acid residues of a polypeptide having at least 95% sequence identity to the amino acid sequence SEQ ID NO:46.

Claim 59 (new): The isolated, synthetic or recombinant polypeptide of claim 57, wherein the polypeptide consists essentially of at least 50 amino acid residues of a polypeptide having at least 95% sequence identity to the amino acid sequence SEQ ID NO:46.